



## Adaptation to climate change

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### Abstract:

**Problem:** Even if significant reductions in global greenhouse gas emissions are achieved, some amount of climate change appears to be inevitable. Local, regional, state, and federal planning and regulation should begin to address how to adapt to these changes. **Purpose:** This article presents a policy synthesis of adaptation planning issues, using California as a case study. We examine the institutional and regulatory challenges and tradeoffs that climate change poses in six particularly vulnerable areas: water resources, electricity, coastal resources, air quality, public health, and ecosystem resources. We discuss obstacles to adaptation planning and successes overcoming these barriers, and suggest how planning can incorporate adaptation. **Methods:** This article presents a policy synthesis of adaptation planning issues, drawing on our recent research on California's experience and related literature. We summarize the results of six studies that draw on quantitative and qualitative information gathered through surveys, interviews, and literature review. **Results and conclusions:** Planners should use forward-looking climate data that include higher water and air temperatures, sea-level rise, and increased numbers of extreme events like heat waves, floods, and wildfires when making decisions about future development, infrastructure investments, open-space protection, and disaster preparedness. Climate change will exacerbate conflicts between goals for economic development, habitat protection, and public safety, requiring stronger interagency coordination and new laws and regulations. **Takeaway for practice:** Local and regional planners can help society adapt to a changing climate by using the best available science, deciding on goals and early actions, locating relevant partners, identifying and eliminating regulatory barriers, and encouraging the introduction of new state mandates and guidelines. **Research support:** Partial support for this research was provided by Pacific Gas and Electric, The Nature Conservancy, and Next 10.

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### Resource Description

#### Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

#### Communication Audience:

audience to whom the resource is directed

Policymaker

# Climate Change and Human Health Literature Portal

## **Exposure :**

weather or climate related pathway by which climate change affects health

Air Pollution, Ecosystem Changes, Extreme Weather Event, Food/Water Quality, Food/Water Security, Food/Water Security, Precipitation, Sea Level Rise, Temperature

**Air Pollution:** Interaction with Temperature

**Extreme Weather Event:** Flooding, Landslides, Wildfires

**Food/Water Quality:** Other Water Quality Issue

**Water Quality (other):** Water temperature

**Food/Water Security:** Agricultural Productivity

**Temperature:** Extreme Heat, Fluctuations

## **Geographic Feature:**

resource focuses on specific type of geography

Urban

## **Geographic Location:**

resource focuses on specific location

United States

## **Health Co-Benefit/Co–Harm (Adaption/Mitigation):**

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Infectious Disease, Respiratory Effect

**Infectious Disease:** Vectorborne Disease

**Vectorborne Disease:** General Vectorborne

## **Intervention:**

strategy to prepare for or reduce the impact of climate change on health

A focus of content

## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

## **Model/Methodology:**

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type of model used or methodology development is a focus of resource

Exposure Change Prediction, Methodology

## Resource Type:

format or standard characteristic of resource

Policy/Opinion, Review

## Resilience:

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

## Timescale:

time period studied

Long-Term (>50 years)

## Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content